

Amendments to the Claims:

Revise the claims as set forth below. This listing of claims will replace all prior versions and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A method for protection of computer assets from unauthorized access comprising ~~the steps of:~~
 - receiving in a protection engine, an interface control command;
 - determining whether the interface control command introduces a security risk;
 - when the interface control command introduces a security risk, determining a state of a switch;
 - when the state of the switch is a protected state, inhibiting execution of the interface control command; and
 - when the state of the switch is an unprotected state, allowing execution of the interface control command.
2. (Currently amended) The method of claim 1 wherein ~~the step of~~ inhibiting execution of the interface control command further includes ~~the step of:~~
 - providing an indication that the execution of the interface control command was inhibited.
3. (Currently amended) The method of claim 1 further comprising ~~the step of:~~
 - changing the state of the switch to the protected state when a timeout duration has elapsed.
4. (Currently amended) The method of claim 1 further comprising ~~the steps of:~~
 - determining when the execution of the interface control command has been completed;
 - and

when the execution of the interface control command has been completed, changing the state of the switch to the protected state.

5. (Currently amended) The method of claim 1 wherein ~~the step of~~ determining the state of a switch includes ~~the step of~~:

determining the state of an electrical switch (physical switch).

6. (Currently amended) The method of claim 1 wherein ~~the step of~~ determining the state of a switch includes ~~the step of~~:

determining the state of a software-based switch.

7. (Currently amended) The method of claim 6 wherein ~~the step of~~ determining the state of the software-based switch includes ~~the step of~~:

using cryptographic techniques to determine the state of the software-based switch.

8. (Currently amended) The method of claim 1 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:

allowing data to be written to a hard disk drive.

9. (Currently amended) The method of claim 8 wherein ~~the step of~~ allowing data to be written to a hard disk drive comprises ~~the step of~~:

allowing data to be written to a boot sector of the hard disk drive.

10. (Currently amended) The method of claim 8 wherein ~~the step of~~ allowing data to be written to a hard disk drive comprises ~~the step of~~:

allowing data to be written to a file allocation table of the hard disk drive.

11. (Currently amended) The method of claim 1 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:

allowing data to be written to a floppy disk drive.

12. (Currently amended) The method of claim 1 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:
- allowing data to be written to a BIOS memory.
13. (Currently amended) The method of claim 1 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:
- allowing data to be written to a parallel port.
14. (Currently amended) The method of claim 1 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:
- allowing data to be written to a serial port.
15. (Currently amended) The method of claim 14 wherein ~~the step of~~ allowing data to be written to a serial port further comprises ~~the step of~~:
- allowing data to be written to a universal serial bus (USB).
16. (Currently amended) The method of claim 14 wherein ~~the step of~~ allowing data to be written to a serial port further comprises ~~the step of~~:
- allowing data to be written to an IEEE-1394 interface.
17. (Currently amended) The method of claim 13 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:
- allowing data to be written to a flash memory device.
18. (Currently amended) The method of claim 13 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:
- allowing data to be written to a thermal management controller.
19. (Currently amended) The method of claim 1 wherein ~~the step of~~ determining whether the interface control command introduces a security risk comprises ~~the step of~~:

determining whether the interface control command is a hard disk drive formatting command.

20. (Currently amended) The method of claim 19 wherein ~~the step of determining whether the interface control command is the hard disk drive formatting command further comprises the step of:~~

determining whether the interface control command is a boot sector write command.

21. (Currently amended) The method of claim 1 wherein ~~the step of determining whether the interface control command introduces a security risk comprises the step of:~~

determining whether the interface control command is a program file write command.

22. (Currently amended) The method of claim 21 wherein ~~the step of determining whether the interface control command is a program file write command further comprises the steps of:~~

obtaining a file extension from the interface control command;

determining whether the file extension is an executable file extension.

23. (Currently amended) The method of claim 22 wherein ~~the step of determining whether the file extension is an executable file extension further comprises the step of:~~

determining whether the file extension is one of an exe extension, a com extension, a bat extension, or a bin extension.

24. (Currently amended) The method of claim 1 wherein ~~the step of determining whether the interface control command introduces a security risk comprises the step of:~~

determining whether the interface control command changes a file attribute, the file attribute enabling or disabling execution of a file corresponding to the file attribute.

25. (Currently amended) The method of claim 1 wherein ~~the step of determining whether the interface control command introduces a security risk comprises the step of:~~

determining whether the interface control command disables a thermal management subsystem.

26. (Currently amended) The method of claim 25 wherein ~~the step of determining whether the interface control command disables a thermal management subsystem comprises the step of:~~

determining whether the interface control command disables a fan.

27. (Currently amended) The method of claim 1 wherein ~~the step of determining whether the interface control command introduces a security risk comprises the step of:~~

determining whether the interface control command is a write command to write to a system firmware (BIOS).

28. (Currently amended) The method of claim 1 wherein ~~the step of determining whether the interface control command introduces a security risk comprises the step of:~~

determining whether the interface control command is a write command to write to a parallel port.

29. (Currently amended) The method of claim 1 wherein ~~the step of determining whether the interface control command introduces a security risk comprises the step of:~~

determining whether the interface control command is a write command to write to a serial port.

30. (Currently amended) The method of claim 29 wherein ~~the step of determining whether the interface control command interface control command is a write command to write to a serial port comprises the step of:~~

determining whether the interface control command is a write command to write to a universal serial bus (USB).

31. (Currently amended) The method of claim 29 wherein ~~the step of~~ determining whether the interface control command is a write command to write to a serial port comprises ~~the step of~~:

determining whether the interface control command is a write command to write to an IEEE-1394 interface.

32. (Currently amended) The method of claim 1 wherein ~~the step of~~ determining whether the interface control command introduces a security risk comprises ~~the step of~~:

determining whether the interface control command is a write command to write to a flash memory device.

33. (Currently Amended) A method for protection of computer assets from unauthorized access comprising ~~the steps of~~:

receiving in a protection engine in a south bridge, an interface control command;

determining whether the interface control command introduces a security risk;

when the interface control command introduces a security risk, determining whether a source of the interface control command is authentic;

when the source of the interface control command is not authentic, inhibiting execution of the interface control command; and

when the source of the interface control command is authentic, allowing execution of the interface control command.

34. (Currently amended) The method of claim 33 wherein ~~the step of~~ inhibiting execution of the interface control command further includes ~~the step of~~:

providing an indication that the execution of the interface control command was inhibited.

35. (Currently amended) The method of claim 33 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:

allowing data to be written to a hard disk drive.

36. (Currently amended) The method of claim 35 wherein ~~the step of~~ allowing data to be written to a hard disk drive comprises ~~the step of~~:

allowing data to be written to a boot sector of the hard disk drive.

37. (Currently amended) The method of claim 35 wherein ~~the step of~~ allowing data to be written to a hard disk drive comprises ~~the step of~~:

allowing data to be written to a file allocation table of the hard disk drive.

38. (Currently amended) The method of claim 33 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:

allowing data to be written to a floppy disk drive.

39. (Currently amended) The method of claim 33 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:

allowing data to be written to a BIOS memory.

40. (Currently amended) The method of claim 33 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:

allowing data to be written to a parallel port.

41. (Currently amended) The method of claim 33 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:

allowing data to be written to a serial port.

42. (Currently amended) The method of claim 41 wherein ~~the step of~~ allowing data to be written to a serial port further comprises ~~the step of~~:

allowing data to be written to a universal serial bus (USB).

43. (Currently amended) The method of claim 41 wherein ~~the step of~~ allowing data to be written to a serial port further comprises ~~the step of~~:

allowing data to be written to an IEEE-1394 interface.

44. (Currently amended) The method of claim 33 wherein ~~the step of~~ allowing execution of the interface control command further comprises ~~the step of~~:

allowing data to be written to a flash memory device.

45. (Currently amended) The method of claim 33 wherein ~~the step of~~ determining whether the interface control command introduces a security risk comprises ~~the step of~~:

determining whether the interface control command is a hard disk drive formatting command.

46. (Currently amended) The method of claim 45 wherein ~~the step of~~ determining whether the interface control command is the hard disk drive formatting command further comprises ~~the step of~~:

determining whether the interface control command is a boot sector write command.

47. (Currently amended) The method of claim 33 wherein ~~the step of~~ determining whether the interface control command introduces a security risk comprises ~~the step of~~:

determining whether the interface control command is a program file write command.

48. (Currently amended) The method of claim 47 wherein ~~the step of~~ determining whether the interface control command is a program file write command further comprises ~~the steps of~~:

obtaining a file extension from the interface control command;

determining whether the file extension is an executable file extension.

49. (Currently amended) The method of claim 48 wherein ~~the step of~~ determining whether the file extension is an executable file extension further comprises ~~the step of~~:

determining whether the file extension is one of an exe extension, a com extension, a bat extension, or a bin extension.

50. (Currently amended) The method of claim 33 wherein ~~the step of~~ determining whether the interface control command introduces a security risk comprises ~~the step of~~:

determining whether the interface control command changes a file attribute, the file attribute enabling or disabling execution of a file corresponding to the file attribute.

51. (Currently amended) The method of claim 33 wherein ~~the step of~~ determining whether the interface control command introduces a security risk comprises ~~the step of~~:

determining whether the interface control command disables a thermal management subsystem.

52. (Currently amended) The method of claim 51 wherein ~~the step of~~ determining whether the interface control command disables a thermal management subsystem comprises ~~the step of~~:

determining whether the interface control command disables a fan.

53. (Currently amended) The method of claim 33 wherein ~~the step of~~ determining whether the interface control command introduces a security risk comprises ~~the step of~~:

determining whether the interface control command is a write command to write to system firmware (BIOS).

54. (Currently amended) The method of claim 33 wherein ~~the step of~~ determining whether the interface control command introduces a security risk comprises ~~the step of~~:

determining whether the interface control command is a write command to write to a parallel port.

55. (Currently amended) The method of claim 33 wherein ~~the step of~~ determining whether the interface control command introduces a security risk comprises ~~the step of~~:

determining whether the interface control command is a write command to write to a serial port.

56. (Currently amended) The method of claim 55 wherein ~~the step of~~ determining whether the interface control command is a write command to write to a serial port comprises ~~the step of~~:

determining whether the interface control command is a write command to write to a universal serial bus (USB).

57. (Currently amended) The method of claim 55 wherein ~~the step of~~ determining whether the interface control command is a write command to write to a serial port comprises ~~the step of~~:

determining whether the interface control command is a write command to write to an IEEE-1394 interface.

58. (Currently amended) The method of claim 33 wherein ~~the step of~~ determining whether the interface control command introduces a security risk comprises ~~the step of~~:

determining whether the interface control command is a write command to write to a flash memory device.

59. (Currently amended) The method of claim 33 wherein ~~the step of~~ determining whether the source of the interface control command is authentic comprises ~~the step of~~:

issuing a challenge to the source of the interface control command;

receiving a response from the source of the interface control command; and

determining whether the response is valid.

60. (Currently amended) The method of claim 59 wherein ~~the step of~~ determining whether the response is valid comprises ~~the step of~~:

comparing the response to a mathematical function of a value accessible only to the protection engine and to an operating system.

61. (Currently amended) The method of claim 60 further comprising ~~the step of~~:

writing the value from a processor to a one-time-writable register in the protection engine (by an operating system) during a boot process (before application software is enabled).

62. (Currently amended) The method of claim 59 wherein ~~the step of~~ determining whether the response is valid comprises ~~the step of~~:

performing a mathematical operation on the challenge to produce a correct response value; and

comparing the response to the correct response value.

63. (Currently amended) The method of claim 59 wherein ~~the step of~~ issuing the challenge to the source of the interface control command includes ~~the step of~~:

obtaining a pseudorandom value; and

forming the challenge based on the pseudorandom value.

64. (Currently Amended) Apparatus for protection of computer assets from unauthorized access comprising:

an interface controller operatively coupled to receive an interface control command to control an interface device;

a switch selectable between a protected state and an unprotected state;

a protection engine operatively coupled to the interface controller to receive the interface control command and operatively coupled to the switch to detect whether the ~~electrical~~ switch is in the protected state or the unprotected state to determine whether the interface control command poses a security risk and to selectively inhibit or allow execution of the interface

control command by the interface controller depending on whether or not the interface control command poses the security risk and depending on whether the switch is in the protected state or the unprotected state.

65. (Original) The apparatus of claim 64 further comprising:

a timer operatively coupled to the switch to reset the switch to the protected state after a period of time has elapsed.

66. (Original) The apparatus of claim 64 further comprising:

an interface control command execution completion sensor operatively coupled to the switch to reset the switch to the protected state after an execution of the interface control command has been completed.

67. (Currently Amended) Apparatus for protection of computer assets from unauthorized access comprising:

a south bridge comprising:

an interface controller operatively coupled to receive an interface control command to control an interface device; and

a protection engine operatively coupled to the interface controller for preventing unauthorized access to the interface device and operatively coupled to receive the interface control command to determine whether a source of the interface control command is authentic and to selectively allow or inhibit execution of the interface control command by the interface controller depending on whether or not the source of the interface control command is authentic.

68. (Original) The apparatus of claim 67 further comprising:

a one-time-writable register operatively coupled to the protection engine to store a value used to determine whether the source of the interface control command is authentic.

69. (Original) The apparatus of claim 68 wherein the value is accessible only to the protection engine and to an operating system.

70. (Currently amended) A method for protection of computer assets from unauthorized access comprising ~~the steps of~~:

receiving in a protection engine, an interface control command;

determining whether the interface control command introduces a security risk determined from at least one of: a type of interface control command, an area of memory affected by the interface control command, a device affected by the interface control command, data associated with the interface control command, an operand associated with the interface control command, and a relationship of the interface control command to another interface control command;

when the interface control command introduces a security risk, determining a state of a switch;

when the state of the switch is a protected state, inhibiting execution of the interface control command; and

when the state of the switch is an unprotected state, allowing execution of the interface control command.

71. (Currently amended) The method of claim 70 including:

physically changing the state of a hardware switch by a user;

wherein ~~the step of~~ determining the state of a switch includes ~~the step of~~ determining the state of the hardware switch.

72. (Previously Presented) The method of claim 71 including performing at least one of:
inhibiting data to be written to and allowing data to be written to a hard disk drive in response to
determining the state of the hardware switch.

73. (Currently amended) The method of claim 70 including:
setting at least one bit in at least one of: a register and memory to change the state of a
software-based switch; wherein ~~the step of determining the state of a switch includes the step of:~~
determining the state of the software-based switch.